

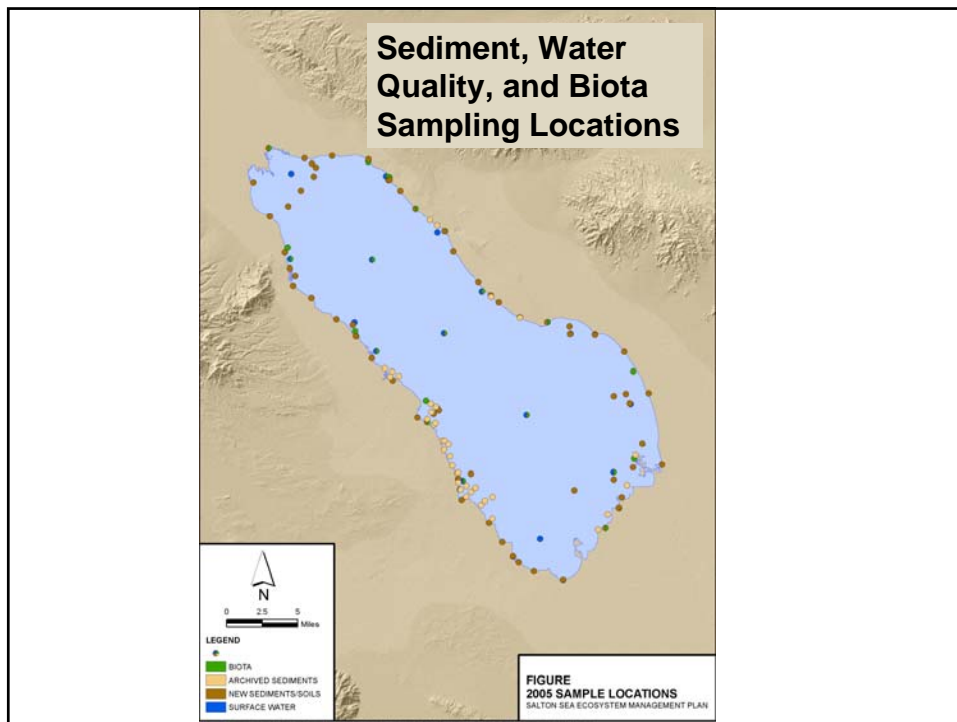
Field Work and Sampling Update

July 15, 2005

Sampling and Field Work Efforts

◆ **Sediment, water quality, and biota sampling efforts**

- ⌘ Sampling efforts to complete identified data gaps
- ⌘ Also re-evaluated archived samples
- ⌘ Evaluation of results currently being completed



Data Gap: Spatial Characterization of Selenium in Salton Sea Sediment

◆ Input to Project/Need

- ⌘ Characterization of near-shore sediments
- ⌘ Prediction of conditions in exposed sediment or other changes under various alternatives

◆ Actions Taken

- ⌘ Analyzed 200-plus archived sediment samples
- ⌘ Sampled shallow sediments and surface soils around the Salton Sea (metals, Semi-volatile Organic Carbons, PCBs, organochlorine pesticides, Total Organic Carbon, and grain size; over 60 samples)

◆ Initial Results

- ⌘ Ranged from Below Detection Limits to 6.3 mg/kg (dry weight), as total Selenium

Data Gap: Spatial Characterization of Selenium in Salton Sea Sediment (cont)

◆ Initial Results

- ⌘ New sediment samples from Below Detection Limits to 6.3 mg/kg (dry weight), as total Selenium
- ⌘ Lake-edge soils ranged from Below Detection Limits to 2.6 mg/kg (dry weight), as total Selenium

Data Gap: Further Characterization of Selenium in Salton Sea Biota

◆ Input to Project/Need

- ⌘ Selenium concentrations in Salton Sea biota/food web
- ⌘ Identify ecological risk

◆ Actions Taken

- ⌘ Selenium in surface water, including Selenium speciation (16 sites)
- ⌘ Food-chain biota in shallow and deep areas including macroalgae, plankton, amphipods, water boatmen, and whole-body fish samples for Eco Risk Assessment (total Selenium for 16 tilapia and 1 sailfin molly composite samples) (7 sites)

Data Gap: Further Characterization of Selenium in Salton Sea Biota (cont)

◆ Actions Taken (cont)

- ⌘ Human health risk assessment for fish fillet consumption (Selenium, Arsenic, Mercury, Cadmium, Inorganic Arsenic, PCB congeners, and organochlorine pesticides for 11 tilapia samples)
- ⌘ Lower Colorado River for comparison to Salton Sea fish and to historic levels (Selenium and Arsenic in tilapia, largemouth bass, and channel catfish) (3 sites)

◆ Initial Results

- ⌘ Salton Sea Selenium Concentrations
 - ⌘ 0.6 to 1.36 ug/L as total Selenium
 - ⌘ More than half was dissolved organic Selenium

Data Gap: Further Characterization of Selenium in Salton Sea Biota (cont)

◆ Initial Results (cont)

- ⌘ Salton Sea Invertebrates Selenium Concentrations
 - ⌘ Below Detection Limits to 6.2 mg/kg (dry weight), as total Selenium
- ⌘ Salton Sea Whole Fish Selenium Concentrations
 - ⌘ 4.9 to 14 mg/kg (dry weight), as total Selenium
- ⌘ Salton Sea Fillets (OEHHA Protocol)
 - ⌘ 0.68 to 3.54 mg/kg (wet weight)
 - ⌘ (OEHHA benchmark is 2 mg/kg (wet weight))
- ⌘ Colorado River Whole Fish Selenium Concentrations
 - ⌘ 2.5 to 9.5 mg/kg (dry weight), as total Selenium

Data Gap: Selenium Release and Bioavailability in Salton Sea Sediments

◆ Input to Project/Need

- ⌘ Understanding effects of changed water quality on bioavailability of Selenium in Salton Sea sediments

◆ Actions Taken

- ⌘ Intact sediment cores
 - ⌘ To predict Se release from sediments under three levels of salinity (2 marine and 1 freshwater); includes Selenium speciation
 - ⌘ Also tests effects of eutrophication by using different oxygen concentrations
- ⌘ Bioaccumulation tests
 - ⌘ To evaluate uptake of Se from sediment to pileworms (and freshwater species) under three levels of salinity (2 marine and 1 freshwater)
- ⌘ Analysis is Ongoing

Data Gap: Understanding of Potentially Exposed Soils

◆ Input to Project/Need

- ⌘ Understanding of soil/sediment emissivity

◆ Actions Taken

- ⌘ Wind tunnel testing (Desert Research Institute)
- ⌘ USGS/USBR studies
 - ⌘ Wind and air quality correlations
 - ⌘ Acoustic survey of sea floor
- ⌘ Aerometric data management and wind field development
- ⌘ Integration with sediment sampling efforts
 - ⌘ Identification of constituents of concern, such as selenium, arsenic, pesticides, and others)
- ⌘ Analysis is Ongoing

Data Gap: Water Quality Improvement Projects by Others

◆ **Input to Project/Need**

- ⌘ Selenium and nutrient water quality improvement
- ⌘ Water quality improvement processes in wetlands
- ⌘ Air quality management processes in wetlands

◆ **Actions Taken**

- ⌘ Salton Sea Authority Water Quality Demonstration Project
- ⌘ Controlled Eutrophication Process Demonstration Project
- ⌘ New River Wetlands Demonstration Project
- ⌘ Torres-Martinez Wetlands Demonstration Project